

## PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 15 AUG 2006

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Applicant's or agent's file reference 030280 WO	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/US04/04668	International filing date (day/month/year) 17 February 2004 (17.02.2004)	Priority date (day/month/year) 18 February 2003 (18.02.2003)	
International Patent Classification (IPC) or national classification and IPC IPC: H04Q 7/38 (2006.01) USPC: 370/342,345			
Applicant QUALCOMM INCORPORATED			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 13 September 2004 (13.09.2004)		Date of completion of this report 06 July 2006 (06.07.2006)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450		Authorized officer Habte Mered	
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Form PCT/IPEA/409 (cover sheet) (April 2005)

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/04668

## Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on
- (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*
- :

- ☒ the international application as originally filed/furnished
- ☒ the description:
- pages 1-34 as originally filed/furnished
- pages\* NONE received by this Authority on \_\_\_\_\_
- pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the claims:
- pages 35-42 as originally filed/furnished
- pages\* NONE as amended (together with any statement) under Article 19
- pages\* NONE received by this Authority on \_\_\_\_\_
- pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- pages 1-4 as originally filed/furnished
- pages\* NONE received by this Authority on \_\_\_\_\_
- pages\* NONE received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

- 3.
- ☐
- The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

- 4.
- ☐
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US04/04668**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 7.8.22 and 23	YES
	Claims 1-6,9-21 and 24-30	NO
Inventive Step (IS)	Claims NONE	YES
	Claims 1-30	NO
Industrial Applicability (IA)	Claims 1-30	YES
	Claims NONE	NO

## 2. Citations and Explanations (Rule 70.7)

Please See Continuation Sheet

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

**V. 2. Citations and Explanations:**

Claims 1-6, 9-21, and 24-30, lack novelty under PCT Article 33(2) as being anticipated by Berruto et al (European Patent Application 0-627-827-A2), hereinafter referred to as Berruto.

*Berruto teaches a radio communication system that accommodates variable-rate information streams simultaneously.*

1. Regarding claims 1 and 16, Berruto discloses in a communication system, a method for determining a data rate for reverse link communication from a mobile station to a base station comprising (Page 3, Lines 52-58): determining packets of data for transmission from the mobile station to a number of communication services (Page 2, Lines 45-58; Page 3, Lines 56-58; and Page 8, Lines 10-11); determining a transmission deadline of each of the packets of data; arranging the packets of data in a queue for transmission in accordance with the determined transmission deadline (Page 4, Lines 34-44 and Page 5, Lines 39-42; it is indicated implicitly that data packets are queued before transmission); determining a data rate for transmission of the packets of data based on the arrangement of the packets of data in the queue allowing for meeting the transmission deadline for each of the packets of data (Page 4, lines 35-38).
2. Regarding claims 9 and 24, Berruto discloses in a communication system, a method for determining a data rate for reverse link communication from a mobile station to a base station comprising (Page 3, Lines 52-58): determining packets of data for transmission from the mobile station to a number of communication services (Page 2, Lines 45-58; Page 3, Lines 56-58; and Page 8, Lines 10-11); determining a transmission deadline of each of the packets of data deadline (Page 4, Lines 34-44 and Page 5, Lines 39-42; it is indicated implicitly that data packets are queued before transmission); arranging the packets of data in a number of queue arrangements for transmission in accordance with the determined transmission deadline; determining a number of data rates for transmission of the packets of data based on the number of possible queue arrangements (Page 7, Lines 28-40).
3. Regarding claims 2-4, 11-13, 17-19, and 26-28, Berruto discloses a method further comprising: communicating the data rate

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## Supplemental Box

from the mobile station to the base station. (Page 4, Lines 34-44 and Page 5, Lines 40-42. The communication of rates and duration to the base station is considered to implicitly disclosed as it is a necessary feature for the system to work.)

4. Regarding claims 5, 14, 20 and 29, Berruto discloses a method further comprising: determining whether available resources allows for allocation at the base station for transmission from the mobile station at the data rate. (Page 4, Lines 11-15 and 56-57)

5. Regarding claims 6, 10, 15, 21, 25, and 30, Berruto discloses a method further comprising: indicating a congestion level alert to the mobile station when the determining available resources disallow for allocation at the base station for transmission from the mobile station at the data rate. (Page 7, Lines 25-27 and 35-38)

6. Claims 7, 8, 22, and 23, lack an inventive step under PCT Article 33(3) as being obvious over Berruto in view of Holden (US 6, 134, 218).

7. Regarding claims 7 and 22, Berruto teaches all aspects of the claimed invention including a method of determining a new data rate for transmission of the new queue of packets of data, wherein the new data rate is lower than the original data rate. (See Berruto Page 7, Lines 25-40)

Berruto, however, fails to disclose a method of dropping at least a packet of the data packets in the queue to determine a new queue of data packets.

*Holden discloses a congestion detection system and method for an ATM network.*

Holden discloses a method of dropping at least a packet of the data packets in the queue to determine a new queue of data packets. (Column 9, Lines 16-59.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Berruto's method by incorporating packet-dropping method. The motivation being to provide an effective and cheap congestion management scheme as detailed in Holden Column 3, Lines 52-54.

8. Regarding claims 8 and 23, Berruto discloses a method further comprising: determining a new duration for use of the determined new data rate for transmissions of the packets of data based on the arrangement of the packets of data in the new queue. (See Berruto Page 7, Lines 25-40)

----- NEW CITATIONS -----